

How to inject keyboard, mouse & touch screen drivers to WINPE for Surface Pro Laptop 4

In this post, I am going to show you how to inject necessary drivers to WINPE pertaining to Surface Pro Laptop 4.

First download the MSI from here - <https://docs.microsoft.com/en-us/surface/enable-surface-keyboard-for-windows-pe-deployment>

- [Surface Laptop \(1st Gen\) Drivers and Firmware](#) ↗
- [Surface Laptop 2 Drivers and Firmware](#) ↗
- [Surface Laptop 3 with Intel Processor Drivers and Firmware](#) ↗
- [Surface Laptop 4 with Intel Processor Drivers and Firmware](#) ↗ 
- [Surface Laptop 4 with AMD Processor Drivers and Firmware](#) ↗
- [Surface Laptop Studio Drivers and Firmware](#) ↗
- [Surface Pro 8 Drivers and Firmware](#) ↗

<https://www.microsoft.com/en-us/download/102924>

Surface Laptop 4 with Intel Processor Drivers and Firmware

Important! Selecting a language below will dynamically change the complete page content to that language.

Language: **English**

Download

All current drivers and firmware for the Surface Laptop 4 with Intel Processor

Details

Note: There are multiple files available for this download. Once you click on the "Download" button, you will be prompted to select the files you need.

Version:

1.0


Date Published:

6/8/2022

File Name:

SurfaceLaptop4_Win11_22000_22.042.17187.0.msi

SurfaceLaptop4_Win10_18363_21.121.10176.0.msi

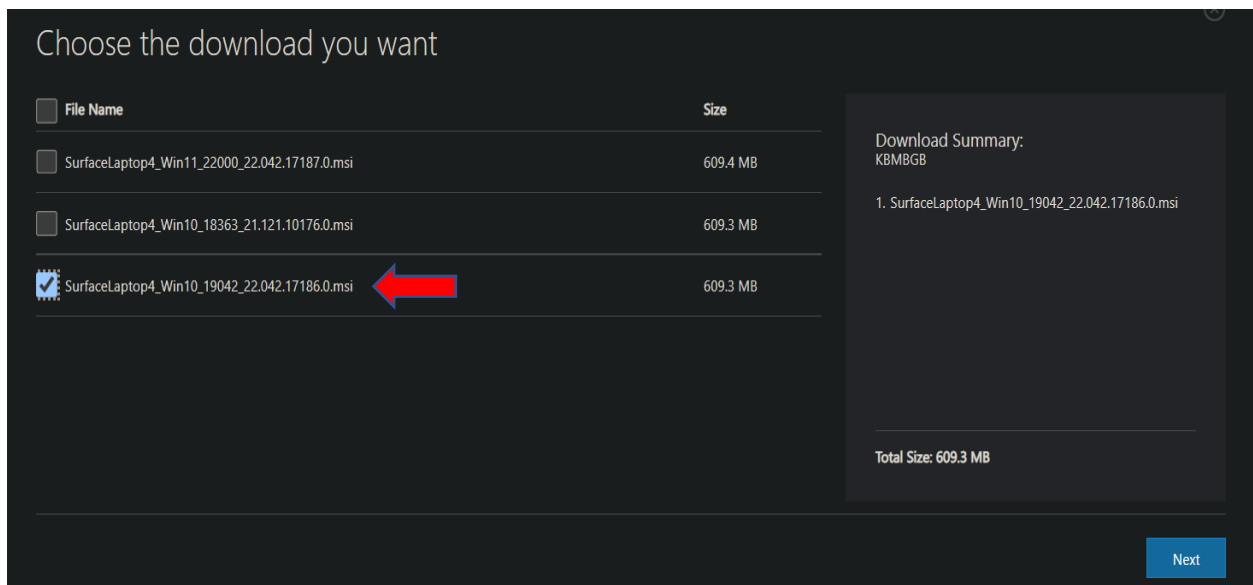
SurfaceLaptop4_Win10_19042_22.042.17186.0.msi 

File Size:

609.4 MB

609.3 MB

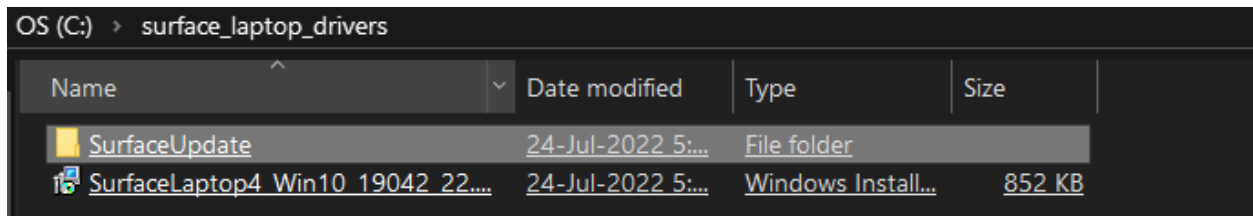
609.3 MB



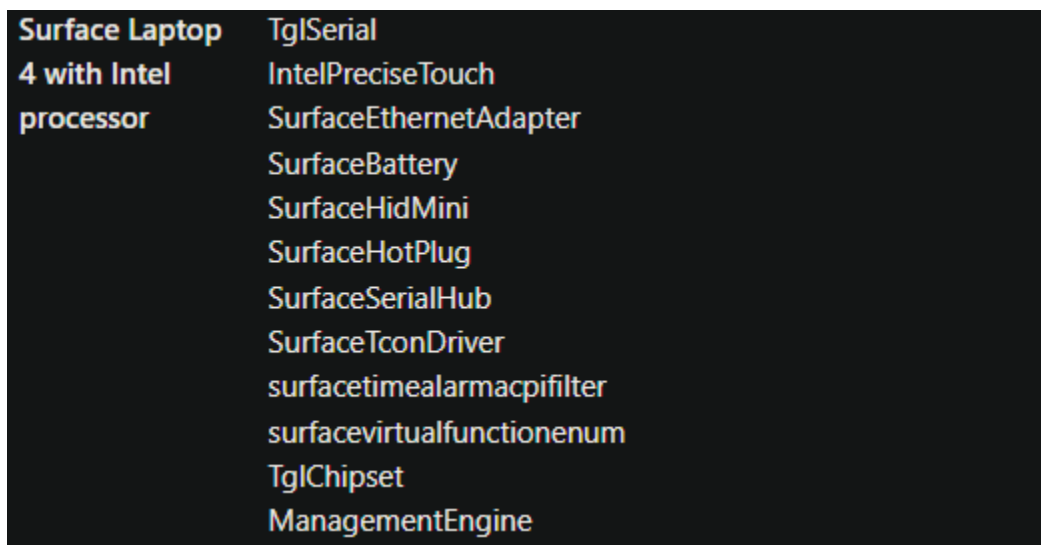
Extract the file from MSI running this command

Msiexec.exe /a SurfaceLaptop4_Win10_19042_22.042.17186.0.msi targetdir=c:\surface_laptop_drivers /qn

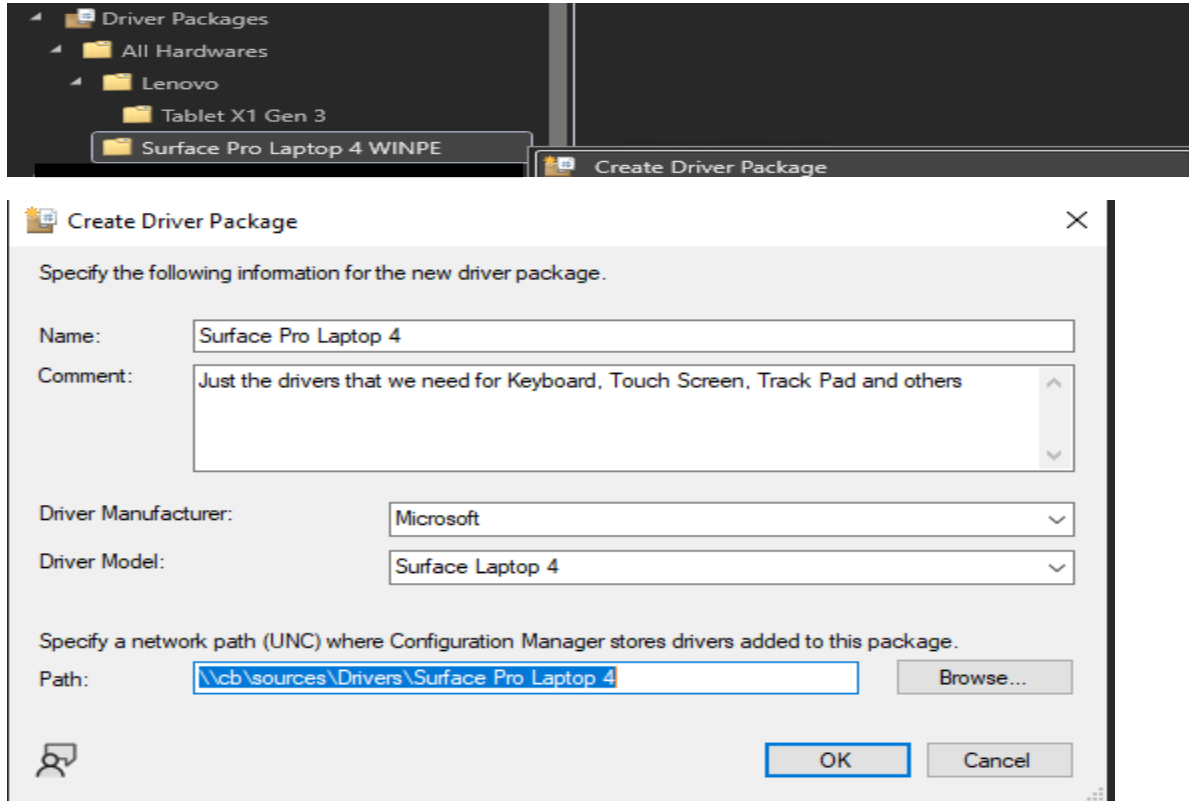
```
C:\Users\Administrator\Downloads>Msiexec.exe /a SurfaceLaptop4_Win10_19042_22.042.17186.0.msi targetdir=c:\surface_laptop_drivers /qn
```



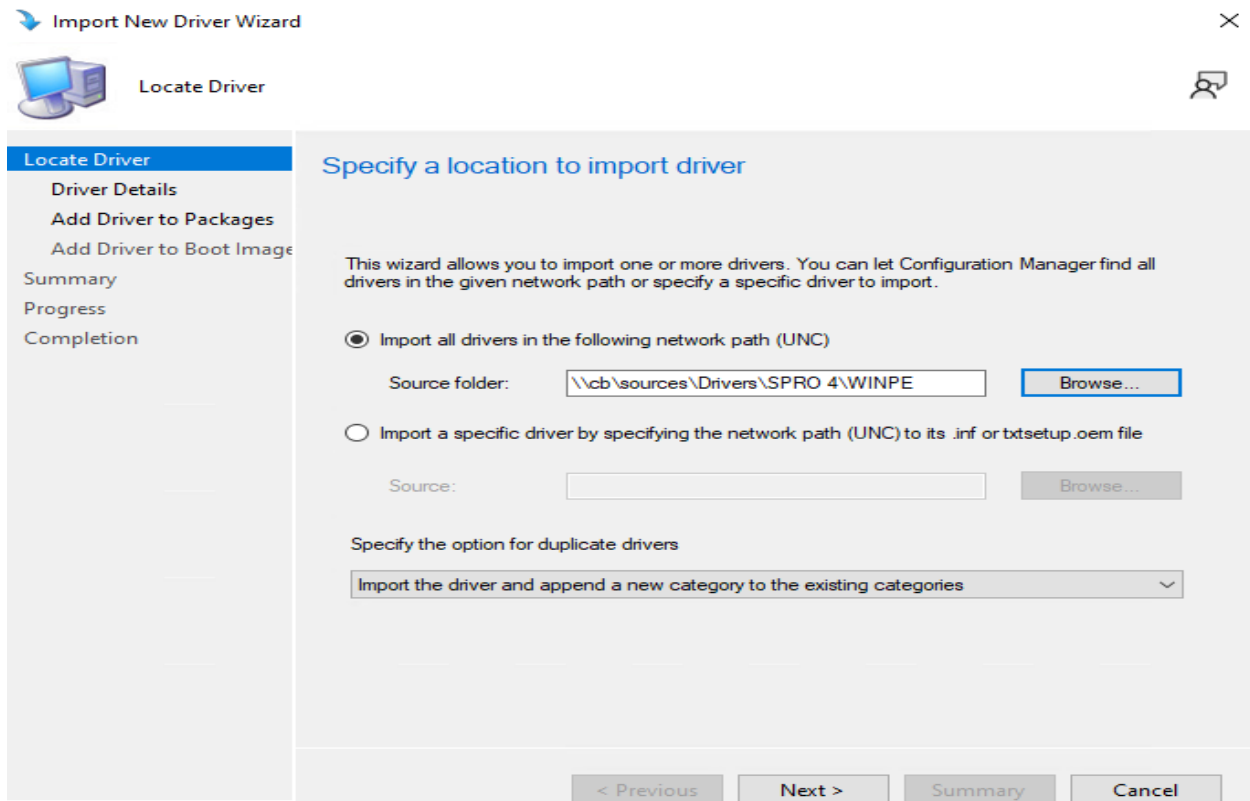
These are the drivers we need to add to WINPE for touch screen and keypad works during PXE boot.



In this post, I am going to show how to do within SCCM. Same steps but little bit different with MDT.



Now go to Drivers – Import Drivers – Select the folder where we copied just the drivers for WINPE.





Locate Driver

Driver Details

Add Driver to Packages

Add Driver to Boot Image

Summary

Progress

Completion

Specify the details for the imported driver

The following drivers will be imported from folder:

\\cb\sources\Drivers\SPRO 4\WINPE\

Hide drivers that are not in a storage or network class (for boot images)

Hide drivers that are not digitally signed

Filter...

File Name	Class	Architecture	Version	Signed
<input checked="" type="checkbox"/> ...intelprecisetouch\IntelTHCB...	HIDClass	x64	3.0.101.246	Yes
<input checked="" type="checkbox"/> ...managementengine\heci.inf	System	x86, x64	2120.100....	Yes
<input checked="" type="checkbox"/> ...surfacebattery\SurfaceBatter...	Battery	x64	2.51.139.0	Yes
<input checked="" type="checkbox"/> ...SurfaceEthemetAdapter\msu...	Net	x64	10.14.117...	Yes

Select All

Clear All

Enable these drivers and allow computers to install them

Assign this driver to one or more categories for filtering.

Categories...

< Previous

Next >

Summary

Cancel



Locate Driver

Driver Details

Add Driver to Packages

Add Driver to Boot Image

Summary

Progress

Completion

Select the packages to add the imported driver

Specify the package to add this driver to.

Drivers must be added to packages and deployed to distribution points before computers can use them. Distribution points can be updated immediately.

It is recommended that you add all required drivers before updating the package.

	Name	Package ID
<input type="checkbox"/>	Lenovo Tablet X1 Gen 3	TOR00030
<input checked="" type="checkbox"/>	Surface Pro Laptop 4	TOR001D2

Select All

Clear All

New Package...

< Previous

Next >

Summary

Cancel



Add Driver to Boot Images



- Locate Driver
- Driver Details
- Add Driver to Packages
- Add Driver to Boot Images
- Summary
- Progress
- Completion

Select drivers to include in the boot image

The imported driver is a network card driver or mass storage device driver and might be necessary for a computer to start.

Select the boot images to include this driver.

Note: Boot images must be updated on their distribution points to add the new drivers.

	Name	Package ID
<input checked="" type="checkbox"/>	Boot image (x64)	TOR00005
<input type="checkbox"/>	Boot image (x86)	TOR00002
<input type="checkbox"/>	MDT 8456 Boot Capture x64	TOR0001E

Select All

Clear All

< Previous **Next >** Summary Cancel

Configuration Manager



Before computers can use the drivers you have added to (or removed from) the selected boot image, you must process the boot image to recreate it with your expected list of drivers and update the content on distribution points.

Do you want Configuration Manager to start this process? If you click 'No', after the wizard is finished you must manually start this process by running the 'Update Distribution Point' action on each updated boot image before they can be used with the expected list of drivers.

Yes No

Configuration Manager



One or more of the selected drivers is not in a storage or network class. You should only add drivers to your boot images that are required to boot.

Are you sure you want to add the selected drivers to this boot image?

Yes No



- Locate Driver
 - Driver Details
 - Add Driver to Packages
 - Add Driver to Boot Image
- Summary**
- Progress
- Completion

The wizard will import the following drivers

Details:

Verify the following drivers for importing.

The following driver(s) will be imported:

- Intel(R) Precise Touch and Stylus (Intel(R) PTS) - Base Driver - Port #1
- Intel(R) Management Engine Interface #1
- Surface Battery
- Surface Ethernet Adapter
- Surface Hid Mini Driver
- Surface Hot Plug
- Surface Serial Hub Driver
- Surface Tcon
- ACPI Wake Alarm
- Surface Virtual Function Enum Device
- DmaSecurity AllowedBus Extension
- Intel(R) GPIO Controller - 34C5
- Intel(R) LPSS: UART #0 - A0A8
- Intel(R) USB Device Controller (OTG) (xDCI) - A0EE
- Intel(R) Serial IO GPIO Host Controller - INT34C5
- Intel(R) Serial IO I2C Host Controller - A0E8
- Intel(R) Serial IO SPI Host Controller - A0AA
- Intel(R) Serial IO UART Host Controller - A0A8

To change these settings, click Previous. To apply the settings, click Next.

< Previous

Next >

Summary

Cancel



- Locate Driver
 - Driver Details
 - Add Driver to Packages
 - Add Driver to Boot Image
- Summary
- Progress
- Completion**



The task "Import New Driver Wizard" completed successfully

Details:

All driver(s) are imported successfully.

Success: The following driver(s) were imported:

- Intel(R) Precise Touch and Stylus (Intel(R) PTS) - Base Driver - Port #1
- Intel(R) Management Engine Interface #1
- Surface Battery
- Surface Ethernet Adapter
- Surface Hid Mini Driver
- Surface Hot Plug
- Surface Serial Hub Driver
- Surface Tcon
- ACPI Wake Alarm
- Surface Virtual Function Enum Device
- DmaSecurity AllowedBus Extension
- Intel(R) GPIO Controller - 34C5
- Intel(R) LPSS: UART #0 - A0A8
- Intel(R) USB Device Controller (OTG) (xDCI) - A0EE
- Intel(R) Serial IO GPIO Host Controller - INT34C5
- Intel(R) Serial IO I2C Host Controller - A0E8
- Intel(R) Serial IO SPI Host Controller - A0AA

To exit the wizard, click Close.

< Previous

Next >

Summary

Close

Drivers 18 items

Search

Icon	Name	Provider	Class	Version Number	Version Date	Categories	Status
	ACPI Wake Alarm	Surface	Extension	1.8.137.0	31-May-202...	"SPRO Laptop...	Enabled
	DmaSecurity AllowedBus Extension	INTEL	Extension	10.1.24.5	30-Dec-196...	"SPRO Laptop...	Enabled
	Intel(R) GPIO Controller - 34C5	INTEL	System	10.1.24.5	30-Dec-196...	"SPRO Laptop...	Enabled
	Intel(R) LPSS: UART #0 - A0A8	INTEL	System	10.1.24.5	30-Dec-196...	"SPRO Laptop...	Enabled
	Intel(R) Management Engine Interface #1	Intel	System	2120.100.0.1085	10-May-202...	"SPRO Laptop...	Enabled
	Intel(R) Precise Touch and Stylus (Intel(R) PTS) - Base Driver - Port #1	Intel	HIDClass	3.0.101.246	03-Feb-2021...	"SPRO Laptop...	Enabled
	Intel(R) Serial IO GPIO Host Controller - INT34C5	Intel Corp...	System	30.100.2031.2	28-Jul-2020...	"SPRO Laptop...	Enabled
	Intel(R) Serial IO I2C Host Controller - A0E8	Intel Corp...	System	30.100.2031.2	28-Jul-2020...	"SPRO Laptop...	Enabled
	Intel(R) Serial IO SPI Host Controller - A0AA	Intel Corp...	System	30.100.2031.2	28-Jul-2020...	"SPRO Laptop...	Enabled
	Intel(R) Serial IO UART Host Controller - A0A8	Intel Corp...	System	30.100.2031.2	28-Jul-2020...	"SPRO Laptop...	Enabled
	Intel(R) USB Device Controller (OTG) (xHCI) - A0EE	INTEL	USBFunci...	10.1.24.5	30-Dec-196...	"SPRO Laptop...	Enabled
	Surface Battery	Surface	Battery	2.51.139.0	28-Sep-2020...	"SPRO Laptop...	Enabled
	Surface Ethernet Adapter	Surface	Net	10.14.117.2020	16-Jan-2020...	"SPRO Laptop...	Enabled
	Surface Hid Mini Driver	Surface	HIDClass	3.33.139.0	03-Nov-202...	"SPRO Laptop...	Enabled
	Surface Hot Plug	Surface	System	3.72.139.0	05-Aug-202...	"SPRO Laptop...	Enabled
	Surface Serial Hub Driver	Surface	System	9.54.139.0	21-Jan-2021...	"SPRO Laptop...	Enabled
	Surface Tcon	Surface	HIDClass	4.28.139.0	18-Nov-202...	"SPRO Laptop...	Enabled
	Surface Virtual Function Enum Device	Surface	HIDClass	2.13.139.0	24-Aug-202...	"SPRO Laptop...	Enabled

If you look at the boot image it has all the drivers for Surface Pro Laptop 4. Now we should be able to test and see, if touch screen, keyboard and mouse works during PXE boot.

Boot image (x64) Properties

Content Locations | Optional Components | Security

General | Images | Drivers | Customization | Data Source | Data Access | Distribution Settings

Drivers:

Filter...

Driver name	Version	Class	Signed	Architecture	INF F
ACPI Wake Alarm	1.8.137.0	Extension	Yes		Surfa
DmaSecurity AllowedBus Extension	10.1.24.5	Extension	Yes		Tigerl
Intel(R) Ethernet Connection I217-LM	12.17.8.7	Net	Yes		e1d6
Intel(R) GPIO Controller - 34C5	10.1.24.5	System	Yes		Tigerl
Intel(R) LPSS: UART #0 - A0A8	10.1.24.5	System	Yes		Tigerl
Intel(R) Management Engine Interf...	2120.100....	System	Yes		heci.i
Intel(R) Precise Touch and Stylus (I...	3.0.101.246	HIDClass	Yes		IntelT
Intel(R) Serial IO GPIO Host Control...	30.100.20...	System	Yes		iaLPS
Intel(R) Serial IO I2C Host Controlle...	30.100.20...	System	Yes		iaLPS
Intel(R) Serial IO SPI Host Controlle...	30.100.20...	System	Yes		iaLPS
Intel(R) Serial IO UART Host Contr...	30.100.20...	System	Yes		iaLPS
Intel(R) USB Device Controller (OT...	10.1.24.5	USBFunci...	Yes		Tigerl
Realtek USB FE Family Controller	10.28.100...	Net	Yes		rtux6-
Realtek USB FE Family Controller	10.25.10....	Net	Yes		rtux6-
Surface Battery	2.51.139.0	Battery	Yes		Surfa
Surface Ethernet Adapter	10.14.117...	Net	Yes		msuxl
Surface Hid Mini Driver	3.33.139.0	HIDClass	Yes		Surfa
Surface Hot Plug	3.72.139.0	System	Yes		Surfa

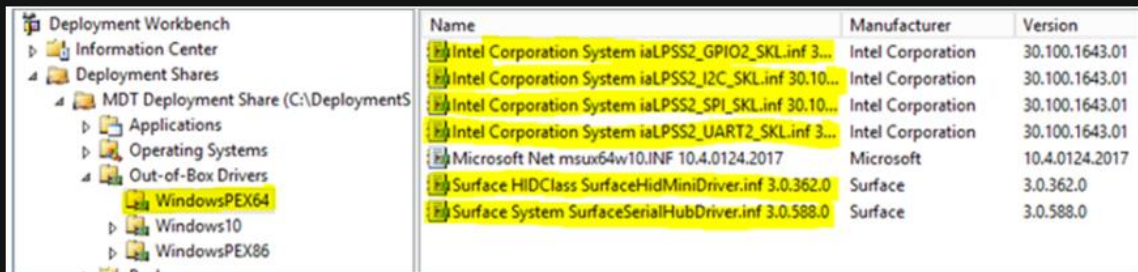
OK Cancel Apply

If you are using MDT follow these steps

3. Open the Deployment Workbench and expand the **Deployment Shares** node and your deployment share, then navigate to the **WindowsPEX64** folder.
4. Right-click the **WindowsPEX64** folder and select **Import Drivers**.
5. Follow the instructions in the Import Driver Wizard to import the driver folders into the WindowsPEX64 folder.

Verify imported drivers & configure Windows PE properties

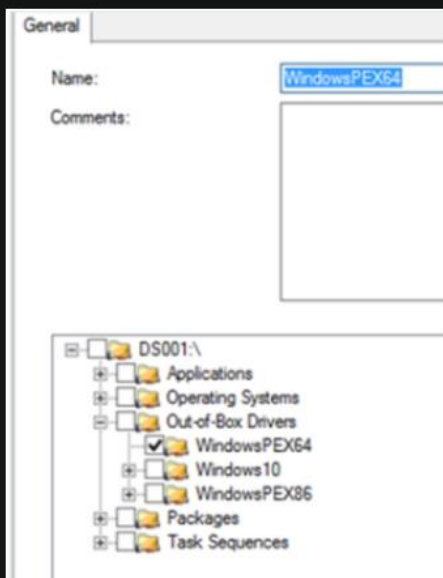
1. Verify that the WindowsPEX64 folder now contains the imported drivers, as shown in the following figure:



The screenshot shows the Deployment Workbench interface. On the left, the tree view is expanded to 'MDT Deployment Share (C:\DeploymentS) > Out-of-Box Drivers > WindowsPEX64'. On the right, a table lists the imported drivers:

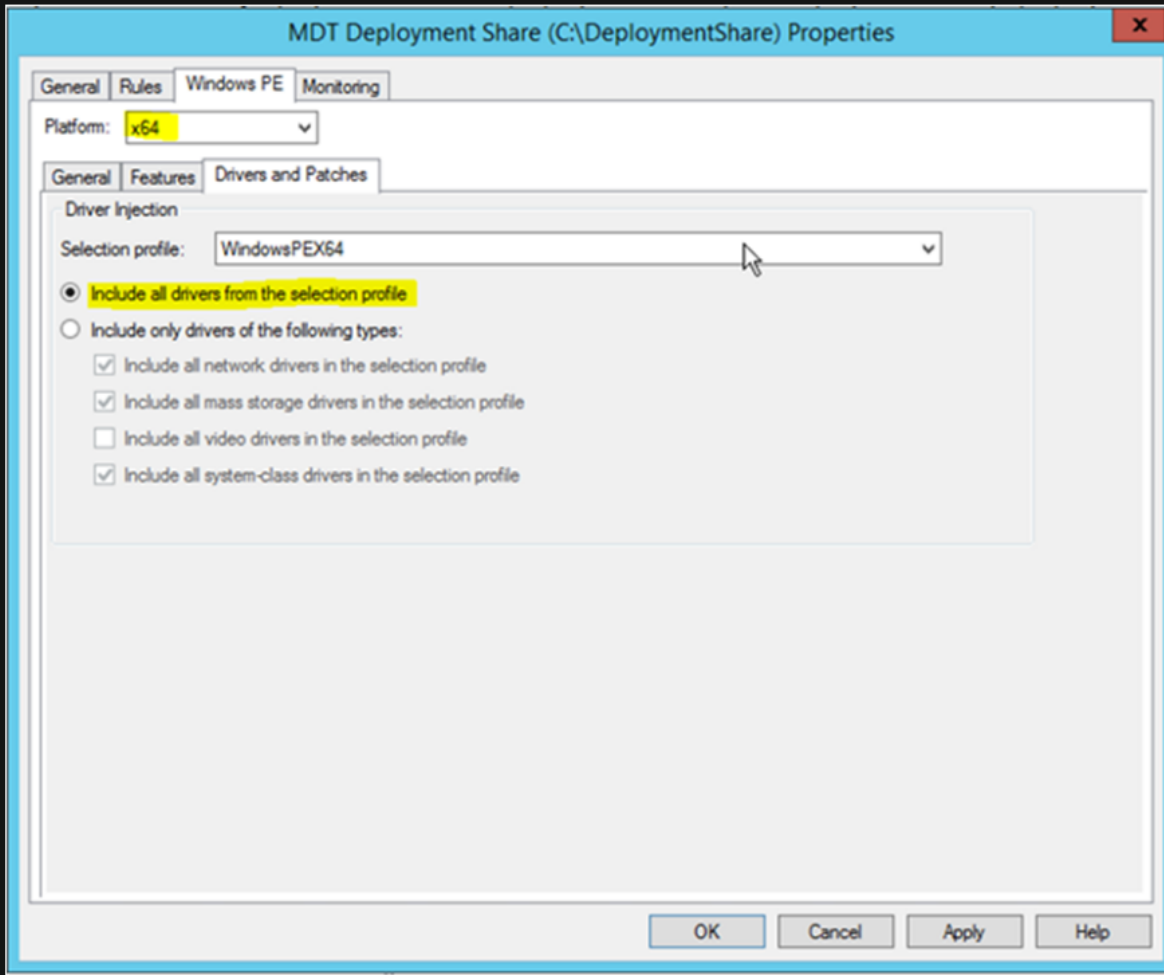
Name	Manufacturer	Version
Intel Corporation System iaLPSS2_GPIO2_SKL.inf 3...	Intel Corporation	30.100.1643.01
Intel Corporation System iaLPSS2_I2C_SKL.inf 30.10...	Intel Corporation	30.100.1643.01
Intel Corporation System iaLPSS2_SPI_SKL.inf 30.10...	Intel Corporation	30.100.1643.01
Intel Corporation System iaLPSS2_UART2_SKL.inf 3...	Intel Corporation	30.100.1643.01
Microsoft Net msux64w10.INF 10.4.0124.2017	Microsoft	10.4.0124.2017
Surface HIDClass SurfaceHidMiniDriver.inf 3.0.362.0	Surface	3.0.362.0
Surface System SurfaceSerialHubDriver.inf 3.0.588.0	Surface	3.0.588.0

2. Configure a selection profile that uses the WindowsPEX64 folder, as shown in the following figure:



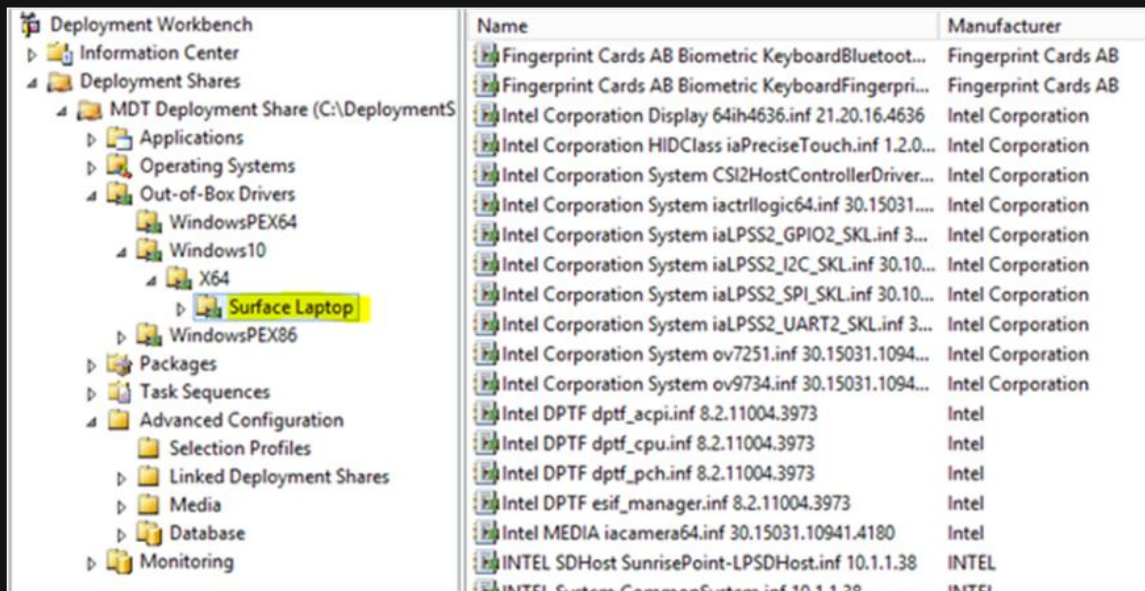
3. Configure the Windows PE properties of the MDT deployment share to use the new selection profile, as follows:

- For **Platform**, select **x64**.
- For **Selection profile**, select the new profile.
- Select **Include all drivers from the selection profile**.



4. Verify that you have configured the remaining Surface Laptop drivers by using either a selection profile or a **DriverGroup001** variable.

- For Surface Laptop (1st Gen), the model is **Surface Laptop**. The remaining Surface Laptop drivers should reside in the \MDT Deployment Share\Out-of-Box Drivers\Windows10\X64\Surface Laptop folder as shown in the following figure.
- For Surface Laptop 2, the model is **Surface Laptop 2**. The remaining Surface Laptop drivers should reside in the \MDT Deployment Share\Out-of-Box Drivers\Windows10\X64\Surface Laptop 2 folder.
- For Surface Laptop 3 with Intel processor, the model is Surface Laptop 3. The remaining Surface Laptop drivers are located in the \MDT Deployment Share\Out-of-Box Drivers\Windows10\X64\Surface Laptop 3 folder.



After configuring the MDT Deployment Share to use the new selection profile and related settings, continue the deployment process as described in [Deploy a Windows 10 image using MDT: Step 6: Create the deployment task sequence](#).

These are the steps on how to import drivers in SCCM and MDT for Surface Pro Laptop 4.

Thanks

Ram

25th Jul 2022